IN THE CLAIMS

1-39. (canceled)

40. (Previously presented) A method for identifying a compound which binds to a polypeptide selected from the group consisting of:

a) a polypeptide which is at least 95% identical to the amino acid sequence of SEQ ID NO:11;

b) a polypeptide which is at least 95% identical to the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:10 or SEQ ID NO:12;

wherein the polypeptide has potassium channel activity;

the method comprising:

i) contacting a sample comprising a polypeptide selected from the group consisting of:

a) a polypeptide which is at least 95% identical to the amino acid sequence of SEQ ID NO:11;

b) a polypeptide which is at least 95% identical to the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:10 or SEQ ID NO:12;

with a test compound under conditions suitable for binding; and

ii) detecting binding of the test compound to the polypeptide;

thereby identifying a compound which binds to the polypeptide.

41. (Previously presented) The method of claim 40, wherein the polypeptide further comprises heterologous sequences.

42. (Previously presented) The method of claim 40, wherein the sample is an isolated polypeptide, a membrane-bound form of an isolated polypeptide or a cell comprising the polypeptide.

43. (Previously presented) The method of claim 42, wherein the cell is a mammalian cell.

44. (Previously presented) The method of claim 40, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) direct detection of test compound/polypeptide binding;

b) a competition binding assay;

c) an immunoassay; and

d) a yeast two-hybrid assay.

45. (Previously presented) The method of claim 40, wherein the binding of the test compound to the polypeptide is detected is by an assay for an activity of the polypeptide.

46. (Previously presented) The method of claim 45, wherein the assay for activity is selected from the group consisting of:

a) an assay for measuring the release of neurotransmitters;

b) an assay for measuring membrane excitability; and

c) an assay for measuring cellular signaling.

47. (Previously presented) A method for identifying a compound which binds to a polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of SEQ ID NO:11;

b) a polypeptide comprising the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-l640; and

c) a polypeptide encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

the method comprising:

i) contacting a sample comprising a polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of SEQ ID NO:11;

b) a polypeptide comprising the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

with a test compound under conditions suitable for binding; and

ii) detecting binding of the test compound to the polypeptide;

thereby identifying a compound which binds to the polypeptide.

48. (Previously presented) The method of claim 47, wherein the polypeptide further comprises heterologous sequences.

49. (Previously presented) The method of claim 47, wherein the sample is an isolated polypeptide, a membrane-bound form of an isolated polypeptide or a cell comprising the polypeptide.

50. (Previously presented) The method of claim 49, wherein the cell is a mammalian cell.

51. (Previously presented) The method of claim 47, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) direct detection of test compound/polypeptide binding;

b) a competition binding assay;

c) an immunoassay; and

d) a yeast two-hybrid assay.

52: (Previously presented) The method of claim 47, wherein the binding of the test compound to the polypeptide is detected is by an assay for an activity of the polypeptide.

53. (Previously presented) The method of claim 52, wherein the assay for activity is selected from the group consisting of:

a) an assay for measuring the release of neurotransmitters;

b) an assay for measuring membrane excitability; and

c) an assay for measuring cellular signaling.

54. (Currently Amended) A method for identifying a compound which binds to a polypeptide selected from the group consisting of:

a) a polypeptide comprising a fragment of at least 15 contiguous amino acids of SEQ ID NO: 11;

b) a polypeptide comprising a fragment of at least 15 contiguous amino acids of the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide comprising a fragment of at least 15 contiguous amino acids encoded by the nucleotide sequence set forth in SEQ ID NO: 10 or SEQ ID NO: 12;

~~wherein the polypeptide has potassium channel activity;~~

the method comprising:

i) contacting a sample comprising a polypeptide selected from the group consisting of:

a) a polypeptide comprising a fragment of at least 15 contiguous amino acids of SEQ ID NO:11;

b) a polypeptide comprising a fragment of at least 15 contiguous amino acids of the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide comprising a fragment of at least 15 contiguous amino acids encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

with a test compound under conditions suitable for binding; and

ii) detecting binding of the test compound to the polypeptide; thereby identifying a compound which binds to the polypeptide.

55. (Previously presented) The method of claim 54, wherein the polypeptide further comprises heterologous sequences.

56. (Previously presented) The method of claim 54, wherein the sample is an isolated polypeptide, a membrane-bound form of an isolated polypeptide or a cell comprising the polypeptide.

57. (Previously presented) The method of claim 56, wherein the cell is a mammalian cell.

58. (Previously presented) The method of claim 54, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) direct detection of test compound/polypeptide binding;

b) a competition binding assay;

c) an immunoassay; and

d) a yeast two-hybrid assay.

59. (canceled)

60. (canceled)